

Council on Postsecondary Education
May 19, 2003

Research Challenge Trust Fund and Programs of Distinction Becoming National Centers of Excellence

The *Kentucky Postsecondary Education Improvement Act of 1997* (House Bill 1) created the trust funds to provide financial incentives to advance reform. The Research Challenge Trust Fund supports nationally recognized research programs at the University of Kentucky and the University of Louisville. The Regional University Excellence Trust Fund supports Programs of Distinction that were put in place to enable each comprehensive university to become nationally recognized in at least one academic or applied research program.

Programs supported by these funds were reviewed at the February 3, 2003, council meeting. The council members requested additional information about the programs' progress toward national prominence as directed in House Bill 1. To document progress, the council staff requested additional reports from the institutions. A summary of the institutional responses follows.

The National Research Council is a primary source of national rankings for our doctorate granting programs. Their previous national rankings occurred in 1993. An updated ranking is expected within the next two years and will be included in subsequent council reports.

Progress Toward National Prominence

The Research Challenge Trust Fund programs are:

- UK: gerontology and aging; advanced medical research; clinical pharmaceutical sciences research and graduate training; molecular mechanisms of toxicity; computer science and electrical engineering; materials synthesis; plant sciences; research, graduate education, and technology transfer; interdisciplinary biological chemistry; management and economics; substance abuse and prevention; expanding frontiers of client server library system; and geography.

- UofL: early childhood education; entrepreneurship; logistics and distribution; and molecular medicine and biotechnology/health related research.

The Regional University Excellence Trust Fund Programs of Distinction are:

- Eastern Kentucky University: Justice and Safety
- Kentucky State University: Aquaculture
- Morehead State University: Institute for Regional Analysis and Public Policy
- Murray State University: Telecommunications Systems Management
- Northern Kentucky University: Center for Integrative Natural Science and Mathematics
- Western Kentucky University: Applied Research and Technology and Media for the 21st Century

University of Kentucky

Several of the RCTF programs are housed in the College of Medicine. An indication of their success is that the College of Medicine was ranked 57th of 122 institutions in National Institutes of Health funding and 30th of 71 public institutions in NIH funding in Fiscal Year 2001. It generated 185 research grants and \$50.5 million in total NIH funding in Fiscal Year 2001. In Fiscal Year 2002, it won \$24 million in grants and awards.

UK College of Medicine RCTF Programs

- Anatomy and Neurobiology
 - The program was ranked 25th of 87 departments in NIH funding in Fiscal Year 2001.
 - The program was ranked 13th of 51 departments in public institutions in NIH funding in Fiscal Year 2001.
 - The program received 20 research grants awarded in Fiscal Year 2001.
 - The program generated \$4.8 million in total NIH funding in Fiscal Year 2001.
- Microbiology and Immunology
 - The program was ranked 31st of 99 departments in NIH funding in Fiscal Year 2001.
 - The program was ranked 12th of 57 departments in public institutions in NIH funding in Fiscal Year 2001.
 - The program received \$5.8 million in NIH funding in Fiscal Year 2001.

- Molecular and Cellular Biochemistry
 - The program was ranked 53rd of 104 departments in NIH funding in Fiscal Year 2001.
 - The program was ranked 29th of 63 departments in public institutions in NIH funding in Fiscal Year 2001.
 - The program received 11 research grants awarded in Fiscal Year 2001.
 - The program generated \$3.1 million in total NIH funding in Fiscal Year 2001.
- Physiology
 - The program was ranked 12th of 99 departments in NIH funding in Fiscal Year 2001.
 - The program was ranked 6th of 60 departments in public institutions in NIH funding in Fiscal Year 2001.
 - The program received 28 research grants in Fiscal Year 2001.
 - The program generated \$7.6 million in total NIH award dollars in Fiscal Year 2001.

Other RCTF Programs at UK

- Gerontology and Aging

There is no known national ranking organization for gerontology and aging. However, excellence may be documented by other measures. The program:

 - Is one of only 30 programs funded by the National Institute on Aging, according to the NIH.
 - Generated over \$1.4 million in doctoral student fellowship support, including a \$630,000 NIH training grant.
 - Increased faculty grant submissions and amount of funding by 20 percent since 1998.
 - Increased the number of publications from the Center on Aging faculty by 15 percent since 1998.
 - Generated over \$5.4 million in grants and awards in Fiscal Year 2002.
- Clinical Pharmaceutical Sciences Research and Graduate Training
 - The program was ranked third nationally by *U.S. News and World Report* (2003) for colleges offering graduate programs in pharmacy.
 - The program ranked 17th nationally in funding by the NIH, as of 2001.
 - The students achieve a pass rate of 98 percent and above on the state boards.

- The students scored 20 points higher in 2002 on the North American Pharmacist Licensure Examination, as compared to any previous year. This group as a whole had the highest scores in the nation, according to NAPLEX.
 - The faculty were co-investigators on grants totaling \$16.4 million, collaborating with faculty in medicine, engineering, arts and sciences, and agriculture.
 - The program generated \$10.2 million in grants and awards in Fiscal Year 2002.
- Molecular Mechanisms of Toxicity
 - The program is one of the few programs nationally supported by an Environmental Toxicology Training Grant (\$297,196) from the National Institute of Environmental Health Sciences.
 - The Graduate Center for Toxicology houses an EPA sponsored *Superfund Basic Research Program* at the University of Kentucky. This \$10+ million, multi-project effort will research nutritional interventions against PCB-mediated diseases, such as atherosclerosis and cancer, critical issues in the state of Kentucky.
 - From 1996-97 to 2001-02, grant and contract awards increased from \$1.4 million to \$3.6 million—an increase of 143 percent.
 - The program generated \$1.9 million in grants and awards in Fiscal Year 2002.
- Excellence in Computer Science and Electrical Engineering
 - The program received a \$5 million grant from the Office of the New Economy to establish a Research Center for Visualization.
 - The program generated \$3.3 million in external grants and awards in Fiscal Year 2002.
- Plant Sciences
 - Selected accomplishments of program faculty include:
 - Fellow of the American Society of Agronomy, 2002.
 - President, American Forage Testing Association, 2000-01.
 - Editor for the journal, Plant Physiology.
 - Medallion Award 2002, American Forage and Grassland Council.
 - Outstanding Plant Pathologist Award, American Phytopathological Society-Southern Division, 2002.
 - Elected Fellow of the American Phytopathological Society, July 2002.
 - The program generated \$5.5 million in grants and awards in Fiscal Year 2002, received one patent, and has one patent pending.

- Biological Chemistry
 - The program increased grant and contract awards by 170 percent from 1996-97 through 2001-02.
 - The program generated \$5.5 million in grants and awards in Fiscal Year 2002.
- Economics and Business Administration
 - The program received a \$1.2 million grant from the U.S. Department of Health and Human Services to establish the Kentucky Center for Poverty Research (one of only three such grants awarded nationally). The center's projects include evaluating the impact of Medicaid on the well-being of infants and children; monitoring children with diabetes and obesity; and studying the link between poverty and domestic violence.
 - The program generated \$1.9 million in grants and awards in Fiscal Year 2002.
- Substance Abuse and Prevention
 - The Psychology/Behavioral Science program ranked 14th in NIH funding in 2002.
 - Dr. Suzanne Segerstrom received the prestigious Templeton Positive Psychology Prize of \$30,000 and a grant of \$70,000 to support research in 2002.
 - Dr. Don Lynam received the prestigious American Psychological Association Distinguished Scientific Award for Early Career Contribution to Psychology in 2002.
 - The program generated \$2 million in grants and awards in Fiscal Year 2002.
- Geography
 - The program increased grant and contract awards from \$11,915 to \$322,058 from 1996-97 to 2001-02.
 - The Cultural Geography program is ranked fifth among programs in the U.S. and Canada by an international survey of cultural geographers published in *The Professional Geographer*.
 - The program generated \$155,262 in new grants and awards in Fiscal Year 2002.

University of Louisville

- Early Childhood Research Center
 - The center's Language and Reading Research program is one of 15 included by the National Institute of Child Health and Human Development in its list of nationally recognized programs for excellence in reading research.
 - Dr. Dennis Molfese served on a strategic planning group for biobehavioral development at the NICHD. He was one of nine distinguished scholars asked to collaborate with staff to identify and prioritize research goals and to suggest appropriate strategies to meet those goals.
 - Researchers have generated over \$11 million in external funding since the center's inception.
- Institute for Entrepreneurial Research
 - The National Small Business Institute Directors Association (400 member universities) selected UofL's Small Business Institute, part of the Institute for Entrepreneurial Research, as the top university program in the nation in 2002.
 - Students participated in the institute's UBS PaineWebber New Venture Competition, winning over \$50,000 in prize money.
 - The institute has generated \$271,135 in research awards since its inception.
- Logistics and Distribution Institute
 - LoDI has established the Center for Engineering Logistics and Distribution, a National Science Foundation Industry/University Cooperative Research Center, with three academic partners: University of Arkansas, University of Oklahoma, and Oklahoma State University. The four universities joined together to merge unique research strengths that allow CELDi to offer an integrated approach to logistics research, covering Material Handling, Intelligent Systems, Logistics Network Design, and Distribution.
 - The institute has generated \$1.4 million in new research awards.
- Molecular Medicine and Biotechnology

Molecular Medicine and Biotechnology is a broad initiative involving programs across the School of Medicine. One indication of success is that UofL has gone from 117th to 96th in NIH funding, and its School of Medicine has gone from 96th to 79th. The National Science Foundation

also ranks institutions in terms of science and engineering expenditures. UofL was 142nd in 1998, and had moved to 121st in 2001. The 2002 figures are not yet available.

The MMB initiative sponsors several centers:

- The Institute of Molecular Cardiology, where Roberto Bolli, M.D., and his team lead the field of research in myocardial ischemia worldwide. This research focuses on heart attack prevention.
- David Gozal, M.D., recognized by the NIH as a national expert on sleep apnea, established the Kosair Children's Sleep Medicine and Apnea Center, a premier pediatric sleep center.
- The James Graham Brown Cancer Center increased funding from the National Cancer Institute from \$300,000 to \$2.6 million in two years.

Eastern Kentucky University

- Justice and Safety

There are no national rankings for higher education programs in "justice and safety" or for the constituent elements of the college. However, the college is attaining national prominence.

- The Assets Protection and Security program is one of five such programs offered across the country. The others are located at Northeastern University, Michigan State University, Washburn University, and City University of New York.
- Criminal Justice faculty are active in the Academy of Criminal Justice Sciences, the field's leading professional organization, including two past-presidents and one past editor of the academic journal. This program also houses the Southern Criminal Justice Association and publishes the region's academic journal.
- One faculty member is currently serving as a justice of the United Nations High Court addressing war crimes and human rights violations in Sierra Leone.
- Graduates of the Emergency Medical Care program have a 90+ percent pass rate on licensing exams.
- The Fire and Safety Engineering Technology program was selected to serve as a regional training site for the Occupational Safety and Health Administration. The program is one of three in the country. The others are located at Oklahoma State University and the University of Maryland.
- The Training Resource Center has achieved over \$100 million in external funding over the past five years. The center serves the fields of juvenile justice, child welfare, and adult corrections.

- The Police Studies program has established international partnerships with Finland, Russia, and Ukraine, and pursues agreements with Kazakhstan, Liberia, and Uzbekistan.

Kentucky State University

- Aquaculture
 - The program has two scientists who previously served as president of the U.S. Aquaculture Society.
 - The program director also served as president of the World Aquaculture Society in 2001-02. This is the oldest and largest professional society devoted to aquaculture in the world, with membership in more than 90 countries.
 - KSU received one of only 30 grants from 1,200 proposals submitted to the Initiative for Future Agriculture and Food Systems program of the USDA.
 - The national aquaculture conference, Aquaculture America 2003, was held in Louisville due to the efforts and reputation of the program's faculty.

Morehead State University

- Institute for Regional Analysis and Public Policy

There is no formal ranking system for MoSU's Institute for Regional Analysis and Public Policy. However, IRAPP is developing a national reputation in its two divisions (Academic Programs and Applied Research, Service, and Policy).

- The Center for Virtual Appalachia serves as the definitive Appalachian Web site and supports regional technology transfer, tourism development, economic development, mapping and GIS technology, and education. There were over 1.7 million "hits" to the site during 2001-02 from 72,022 distinct users.
- The Atlas of Appalachia, published by IRAPP with support from Western Kentucky University, the University of Kentucky, East Carolina University, and Marshall University, is scheduled for release on CD ROM later in 2003.
- IRAPP received \$3.7 million in new grants from federal, state, and local governments, corporations, and foundations in Fiscal Year 2002.

Murray State University

- Telecommunications Systems Management
 - MuSU's Center for Telecommunications Systems Management program currently has constructed the largest database of telecommunications Internet links in the world. Over 50,000 professionals per month use this site for research purposes. This site is visible at www.eXroads.com.
 - The center hosted the second annual National Telecommunications Informational Technology Conference in Louisville in early April.
 - External grants totaling \$495,016 were awarded to the program during 2001-02. Funding sources include the U.S. Department of Education, the National Science Foundation, and BellSouth.

Northern Kentucky University

- Center for Integrative Natural Science and Mathematics

NKU's Center for Integrative Natural Science and Mathematics is not a degree-granting program, but a program that coordinates activities in research, teaching, and outreach across NKU's departments of Biological Sciences, Chemistry, Mathematics and Computer Science, Physics and Geology, and the College of Education. While no formal ranking is available for CINSAM type-programs, students participating in research competitions enjoy consistent success.

- Three CINSAM students won first place in national and regional Tri Beta competitions (a national student honor society). Two additional students also received third place and honorable mentions.
- Six students presented research at national conferences in mathematics, computer science, and chemistry.
- In October 2001, a collaborative proposal between CINSAM and UofL earned a \$6 million National Institutes of Health grant. The grant funds development of the *Kentucky Biomedical Research Infrastructure Network*. This network increases statewide collaboration between biomedical researchers and educators to more effectively compete for federal research funds and to better prepare students for science-related careers.
- A second joint CINSAM/UofL project received \$1.5 million from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education in January 2002. The project is entitled "Urban University's Partnership for Mathematics and Science Teaching."

Western Kentucky University

- Applied Research and Technology
 - Sixty-seven grants were obtained, totaling \$5.2 million in external funding.
 - Three ARTP students won recognition for their research at two national conferences (Geological Society of America and National Cave and Karst Management Symposium) and an international conference (International Conference on Bear Research and Management). Four students received fellowships or scholarships in national competitions for their research work (National Cave and Karst Management Symposium, U.S. Geological Survey Karst Interest Group, National Speleological Society). The concrete canoe team came in fourth overall (first for academics) in competition with top engineering schools from the United States, Mexico, and Canada.
 - One ARTP center is co-hosting the International Conference on Karst Hydrogeology and Ecosystems. Four ARTP faculty members serve as officers in national societies (president of the North American Thermal Analysis Society, president of the National Society of Black Physicists, vice chair of the American Society for Testing and Materials, and councilor of the American Chemical Society). One faculty member was elected a fellow of the North American Thermal Analysis Society, and another received a prestigious award for outstanding service by the American Society for Testing and Materials.
 - The Applied Physics Institute has filed three patents, and products from innovations from ARTP centers will be commercialized in the near future.
- Media for the 21st Century
 - In 2002, the School of Journalism and Broadcasting finished in second place overall in the 42nd annual William Randolph Hearst Foundation Intercollegiate Journalism Awards Competition between first-place University of North Carolina and third-place University of Florida. Also in this competition:
 - Photojournalism students finished second overall in the photojournalism portion of the competition.
 - The campus newspaper, College Heights Herald, earned first place and best all-around non-daily student newspaper published two to four times a week.
 - WKU's photojournalism program placed first overall in the photojournalism competition.

- Broadcasting students earned a fourth-place overall finish in the broadcast news portion of the competition.
- Writing students finished 10th overall in the writing competition.
- The Forensics program captured the national title at the 2003 American Forensic Association National Individual Events Tournament. Eighty-nine colleges and universities attended the tournament with over 1,500 entries from the teams in attendance.
- The program is ranked number one in the number of debaters who qualified for nationals and win/loss record and ranked number one in the nation in individual events.
- Coach Judy Woodring was selected 2002 National Coach of the Year.